

Technical Data Sheet

Full Color Top View LEDs

67-23SDRSUGSUBC/TR8

Features

- P-LCC-4 package.
- White package.
- Optical indicator.
- Colorless clear window.
- Ideal for backlight and light pipe application.
- Inter reflector.
- Low (2mA) current operation.
- Wide viewing angle.
- Suitable for vapor-phase reflow, Infrared reflow and wave solder processes.
- Computable with automatic placement equipment.
- Available on tape and reel (8mm Tape).
- Pb-free.
- The product itself will remain within RoHS compliant version.



Descriptions

- The 67-23 series is available in soft orange, green, blue and yellow. Due to the package design, the LED has wide viewing angle and optimized light coupling by inter reflector. This feature makes the ideal for light pipe application. The low current requirement makes this device ideal for portable equipment or any other application where power is at a premium.

Applications

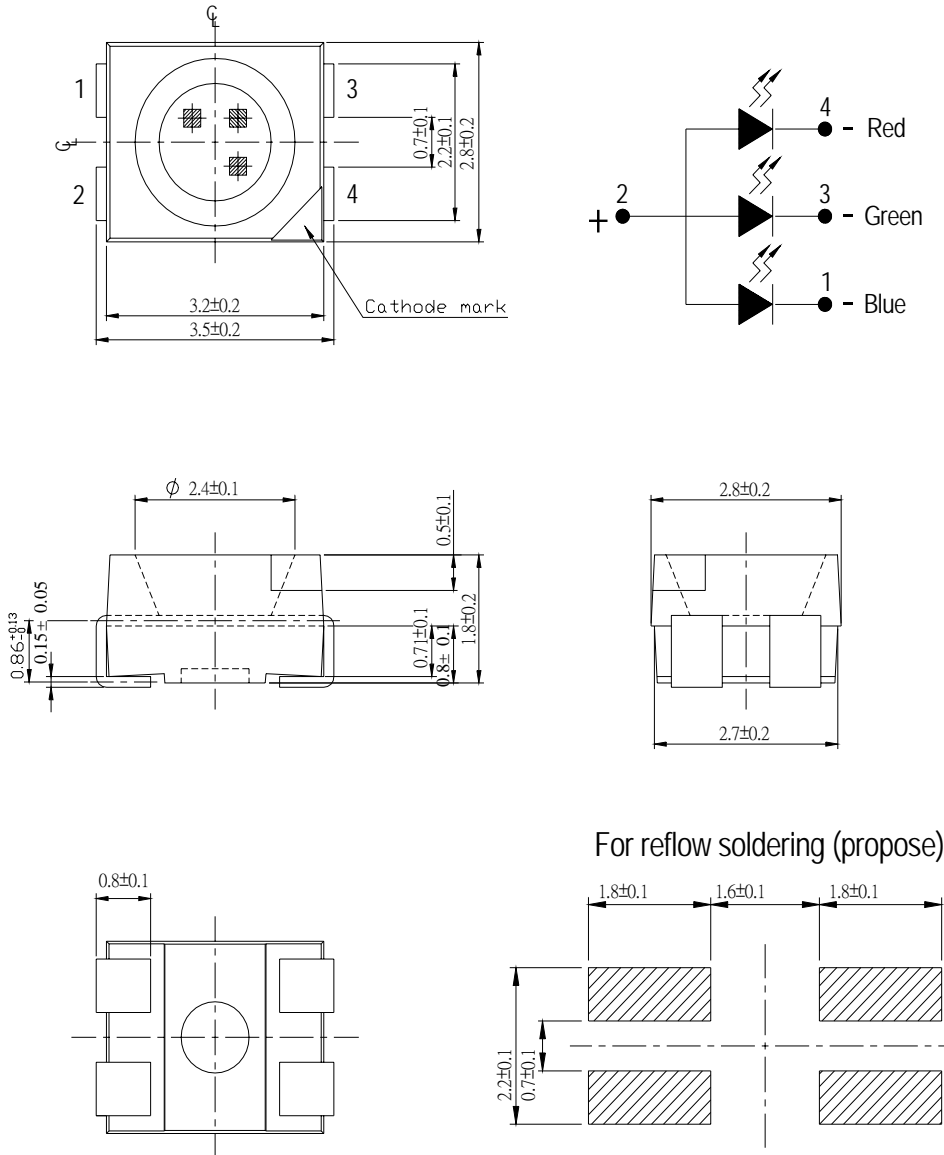
- Automotive: backlighting in dashboard and switch.
- Telecommunication: indicator and backlighting in telephone and fax.
- Flat backlight for LCD's, switches and symbols.
- Light pipe application.
- General use.

Device Selection Guide

Chip			Lens Color
Type	Material	Emitted Color	
SDR	AlGaInP	Deep-Red	Water Clear
SUG	InGaN/SiC	Brilliant Green	
SUB	InGaN/SiC	Blue	

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Package Dimensions



Note: The tolerances unless mentioned is ± 0.1 mm ;Unit = mm.

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit	
Reverse Voltage	VR	5	V	
Forward Current	I _F	SDR	25	mA
		SUG	30	
		SUB	30	
Operating Temperature	Topr	-40 ~ +85	°C	
Storage Temperature	Tstg	-40~ +100	°C	
Electrostatic Discharge(HBM)	ESD	SDR	2000	V
		SUG	1000	
		SUB	1000	
Power Dissipation	Pd	SDR	60	mW
		SUG	130	
		SUB	130	
Peak Forward Current (Duty 1/10 @ 1KHZ)	I _{FP}	SDR	60	mA
		SUG	100	
		SUB	100	
Soldering Temperature	Tsol	Reflow Soldering : 260 °C for 10 sec. Hand Soldering : 350 °C for 3 sec.		

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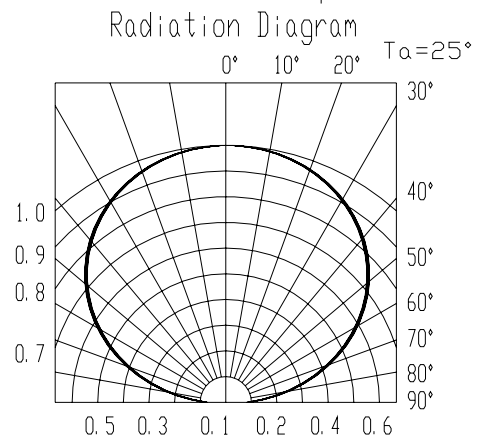
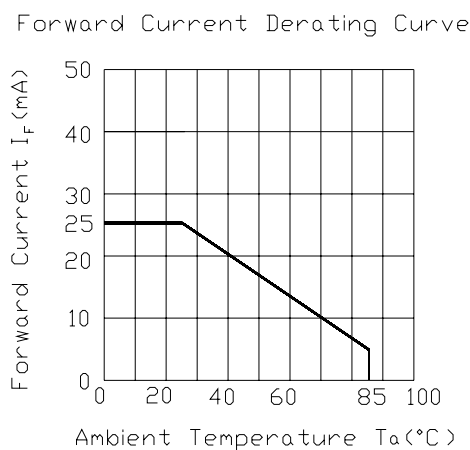
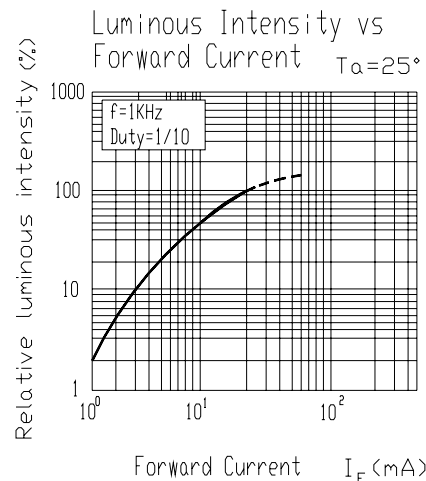
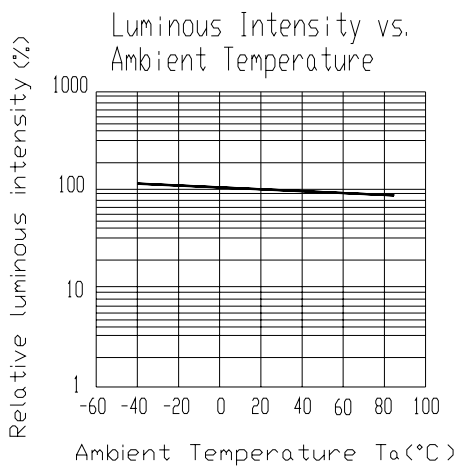
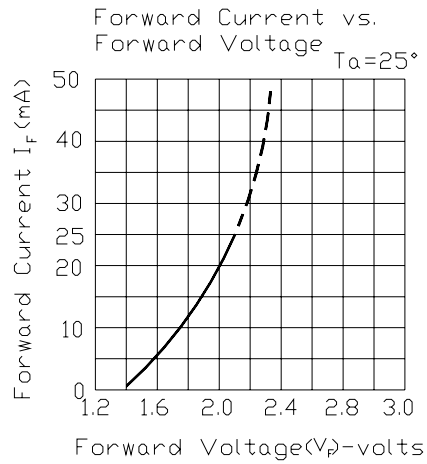
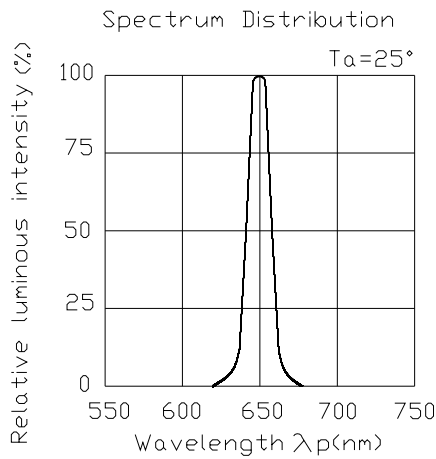
Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition	
Luminous Intensity	I _v	SDR	32	57	-----	mcd	I _F =20mA
		SUG	125	216	-----		
		SUB	63	112	-----		
Peak Wavelength	λ _p	SDR	-----	650	-----	nm	I _F =20mA
		SUG	-----	518	-----		
		SUB	-----	468	-----		
Dominant Wavelength	λ _d	SDR	-----	639	-----	nm	I _F =20mA
		SUG	-----	525	-----		
		SUB	-----	470	-----		
Spectrum Radiation Bandwidth	Δλ	SDR	-----	20	-----	nm	I _F =20mA
		SUG	-----	36	-----		
		SUB	-----	26	-----		
Forward Voltage	V _F	SDR	1.7	2.0	2.4	V	I _F =20mA
		SUG	-----	3.5	4.3		
		SUB	-----	3.5	4.3		
Viewing Angle	2θ 1/2	-----	120	-----	deg	I _F =20mA	
Reverse Current	I _R	-----	-----	10	μA	V _R =5V	

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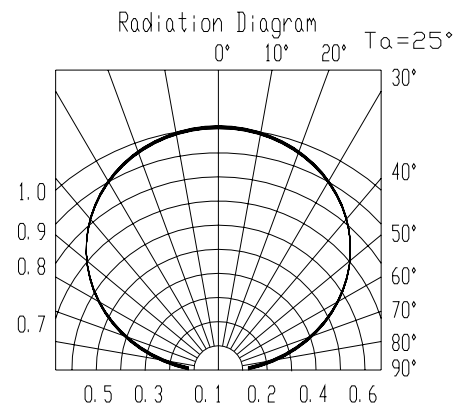
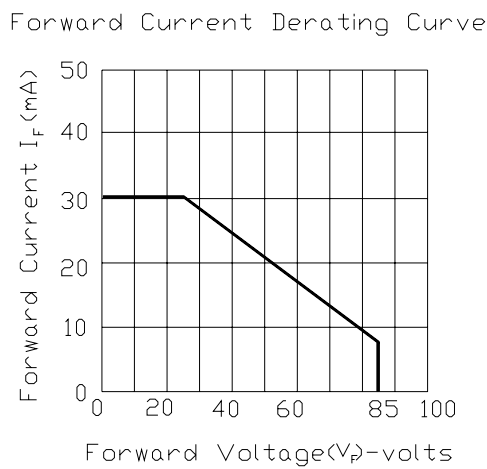
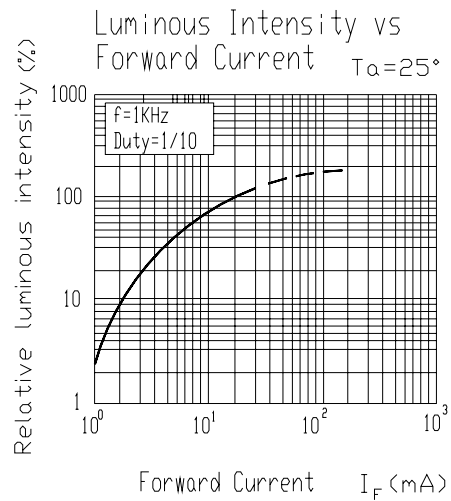
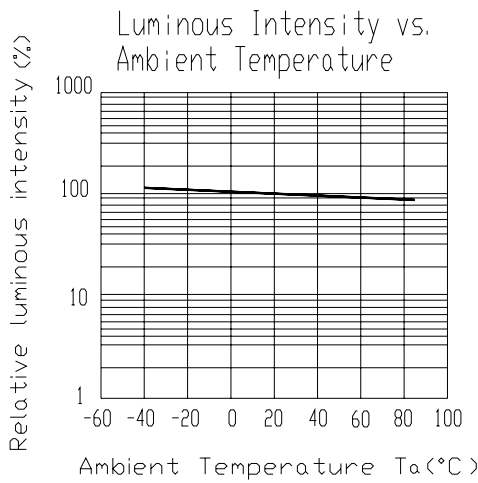
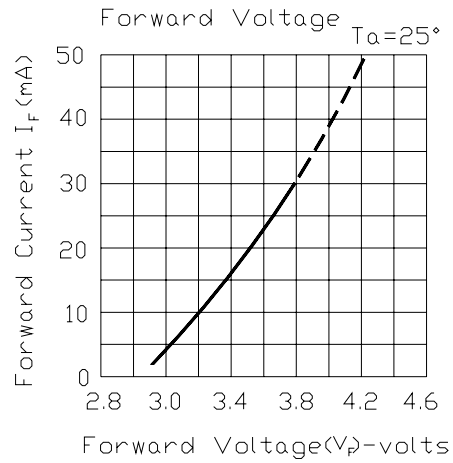
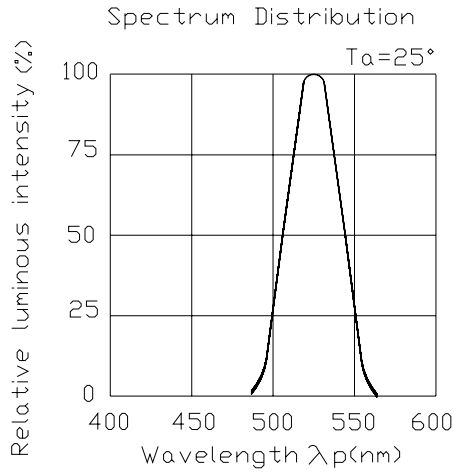
Typical Electro-Optical Characteristics Curves

SDR

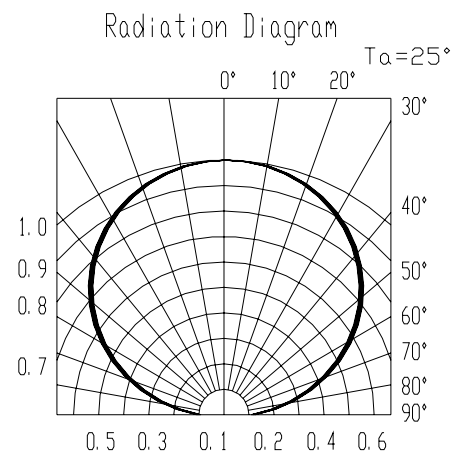
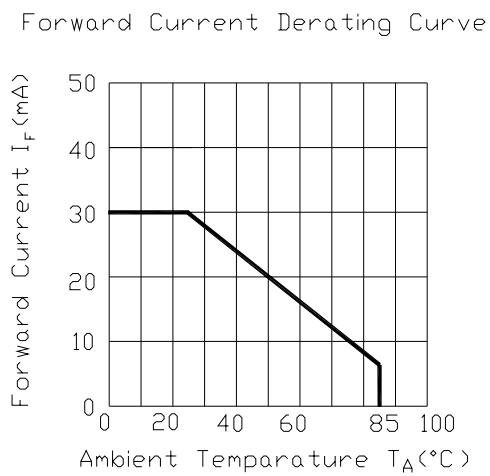
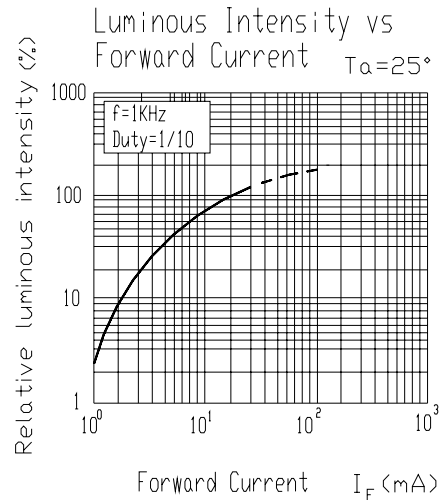
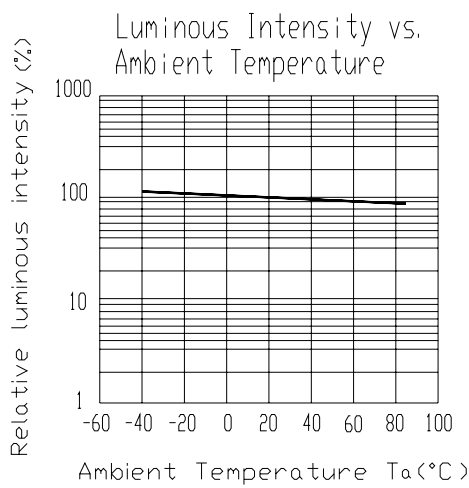
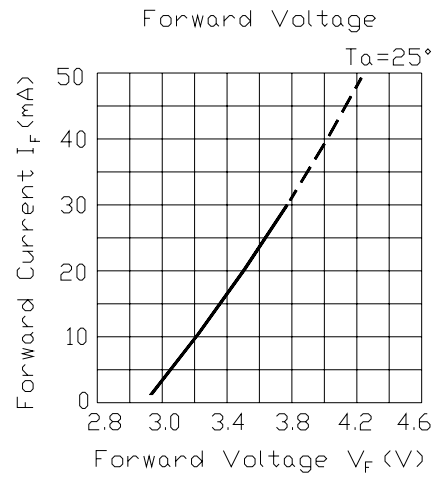
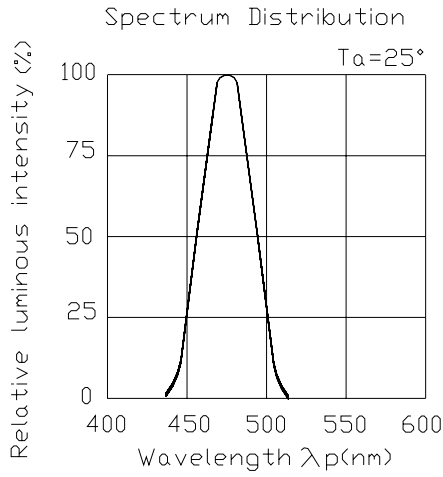


Typical Electro-Optical Characteristics Curves

SUG



SUB



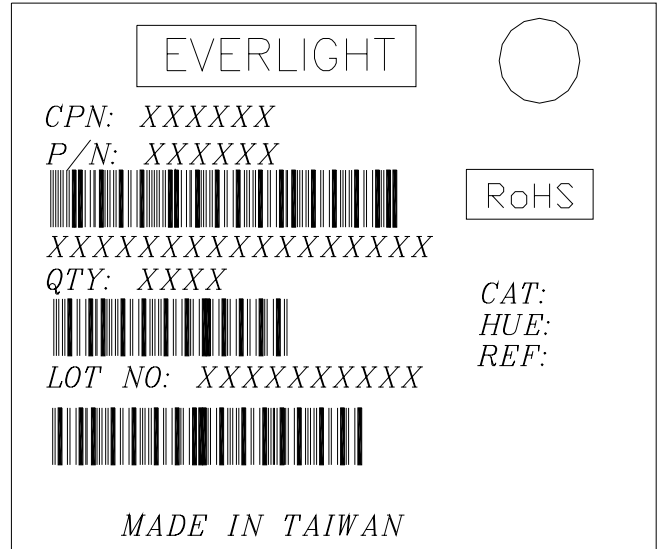
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Label explanation

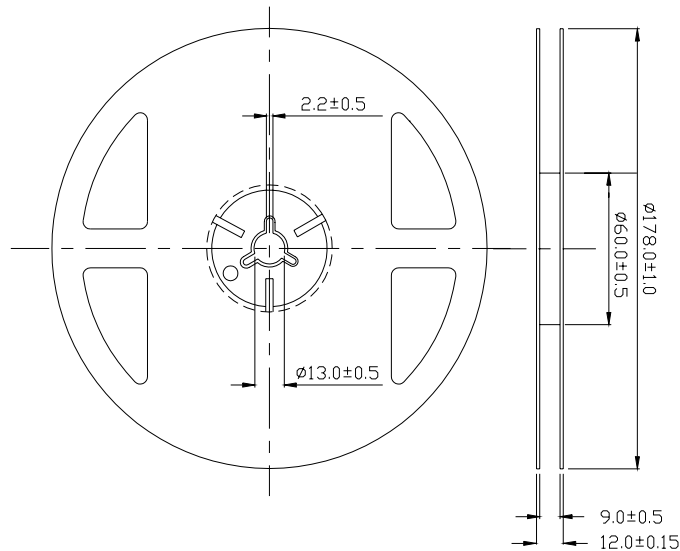
CAT: Luminous Intensity Rank

HUE: Dom. Wavelength Rank

REF: Forward Voltage Rank

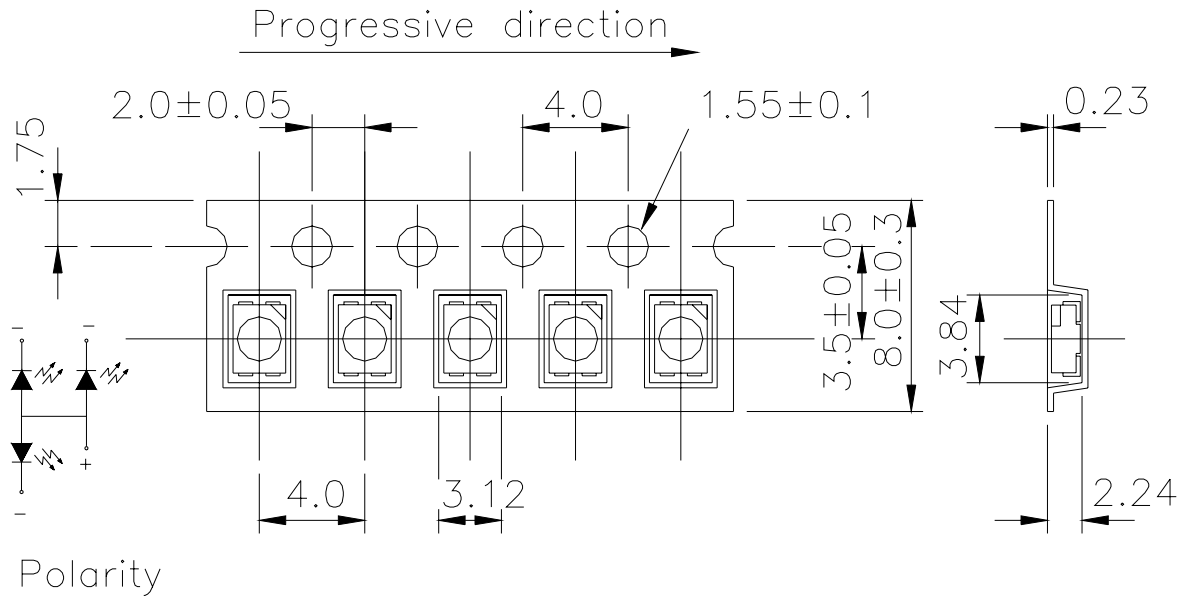


Reel Dimensions



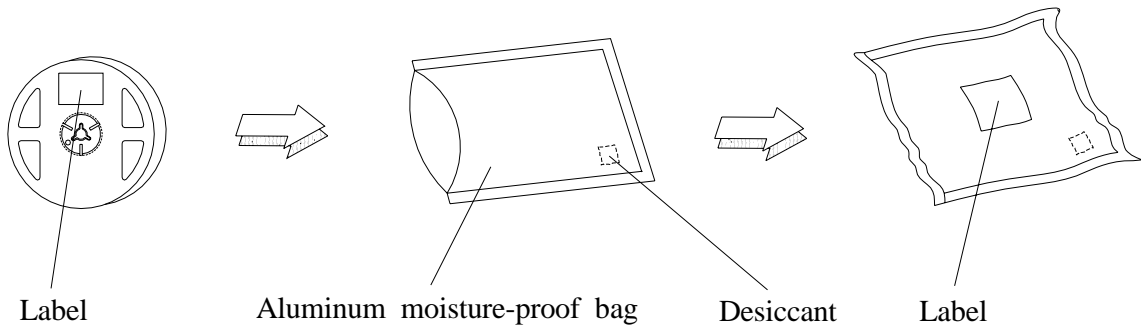
Note: Tolerances Unless Dimension ± 0.1 mm, Unit = mm

Carrier Tape Dimensions: Loaded quantity 2000 PCS per reel



Note: Tolerances Unless Dimension $\pm 0.1\text{mm}$ Unit = mm

Moisture Resistant Packaging



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Reliability Test Items And Conditions

The reliability of products shall be satisfied with items listed below.

Confidence level : 90%

LTPD : 10%

No.	Items	Test Condition	Test Hours/Cycles	Sample Size	Ac/Re
1	Reflow Soldering	Temp. : 260°C ±5°C Min. 5sec.	6 min	22 PCS.	0/1
2	Temperature Cycle	H : +100°C 15min § 5 min L : -40°C 15min	300 Cycles	22 PCS.	0/1
3	Thermal Shock	H : +100°C 5min § 10 sec L : -10°C 5min	300 Cycles	22 PCS.	0/1
4	High Temperature Storage	Temp. : 100°C	1000 Hrs.	22 PCS.	0/1
5	Low Temperature Storage	Temp. : -40°C	1000 Hrs.	22 PCS.	0/1
6	DC Operating Life	IF = 20 mA	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85°C/ 85%RH	1000 Hrs.	22 PCS.	0/1

Precautions For Use

1. Over-current-proof

Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen).

2. Storage

2.1 Do not open moisture proof bag before the products are ready to use.

2.2 Before opening the package: The LEDs should be kept at 30°C or less and 90%RH or less.

2.3 After opening the package: The LED's floor life is 1 year under 30 deg C or less and 60% RH or less.

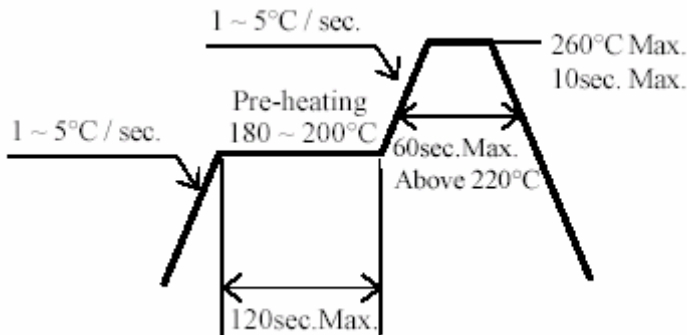
If unused LEDs remain, it should be stored in moisture proof packages.

2.4 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.

Baking treatment : 60±5°C for 24 hours.

3. Soldering Condition

3.1 Pb-free solder temperature profile



3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the LEDs during heating.

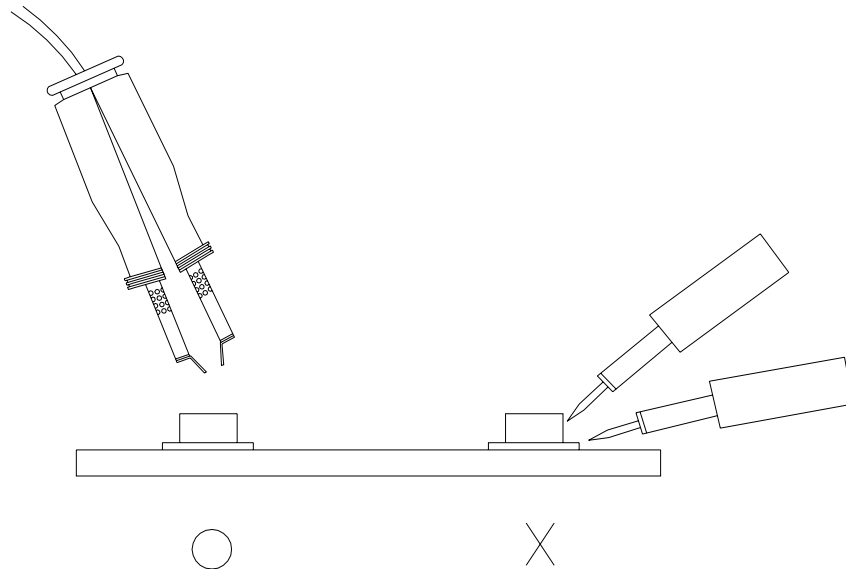
3.4 After soldering, do not warp the circuit board.

4.Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

67-23SDRSUGSUBC/TR8**5.Repairing**

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a doSUBle-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.

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